

Your New

**Model No. 217-200
217-250**



ROTARY TILLER

WARRANTY

For one year from date of purchase, MTD Products, Inc. will replace for the original purchaser, free of charge, F.O.B. factory or authorized service firm, any part or parts found to be defective in material or workmanship. All transportation charges on parts submitted for replacement under this warranty must be paid by the purchaser. This warranty does not include replacement of parts which become inoperative through misuse, excessive use, accident, neglect, improper maintenance or alterations by unauthorized persons. This warranty does not include the engine, motor, battery, battery charger or any component parts thereof. For service on these units refer to the applicable manufacturer's warranty.

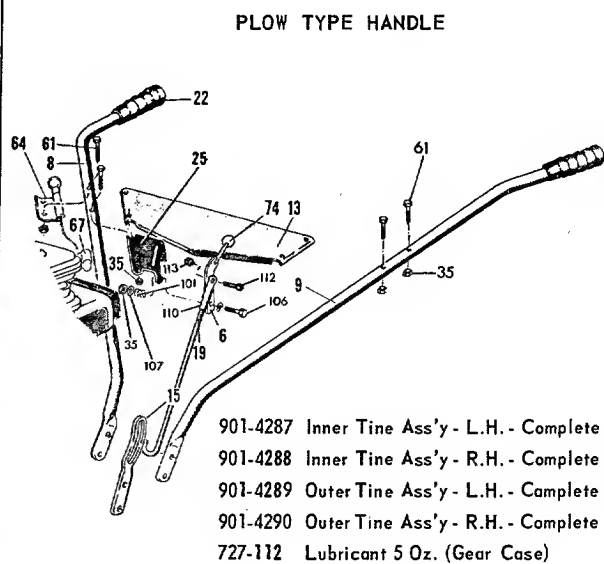
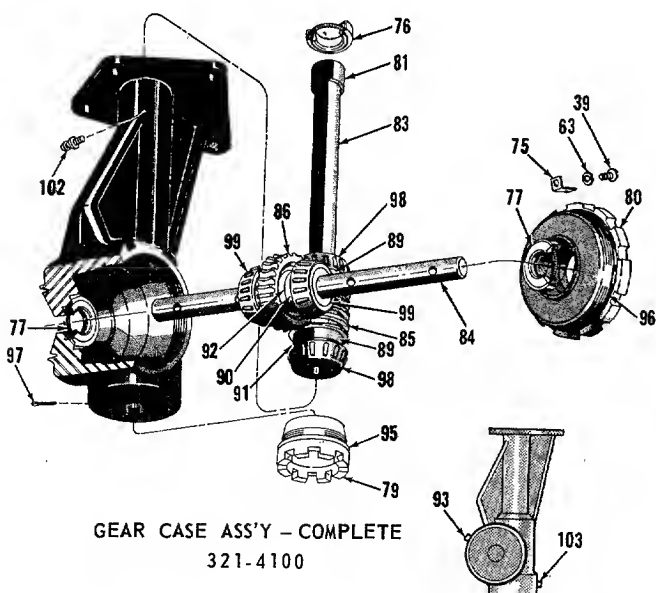
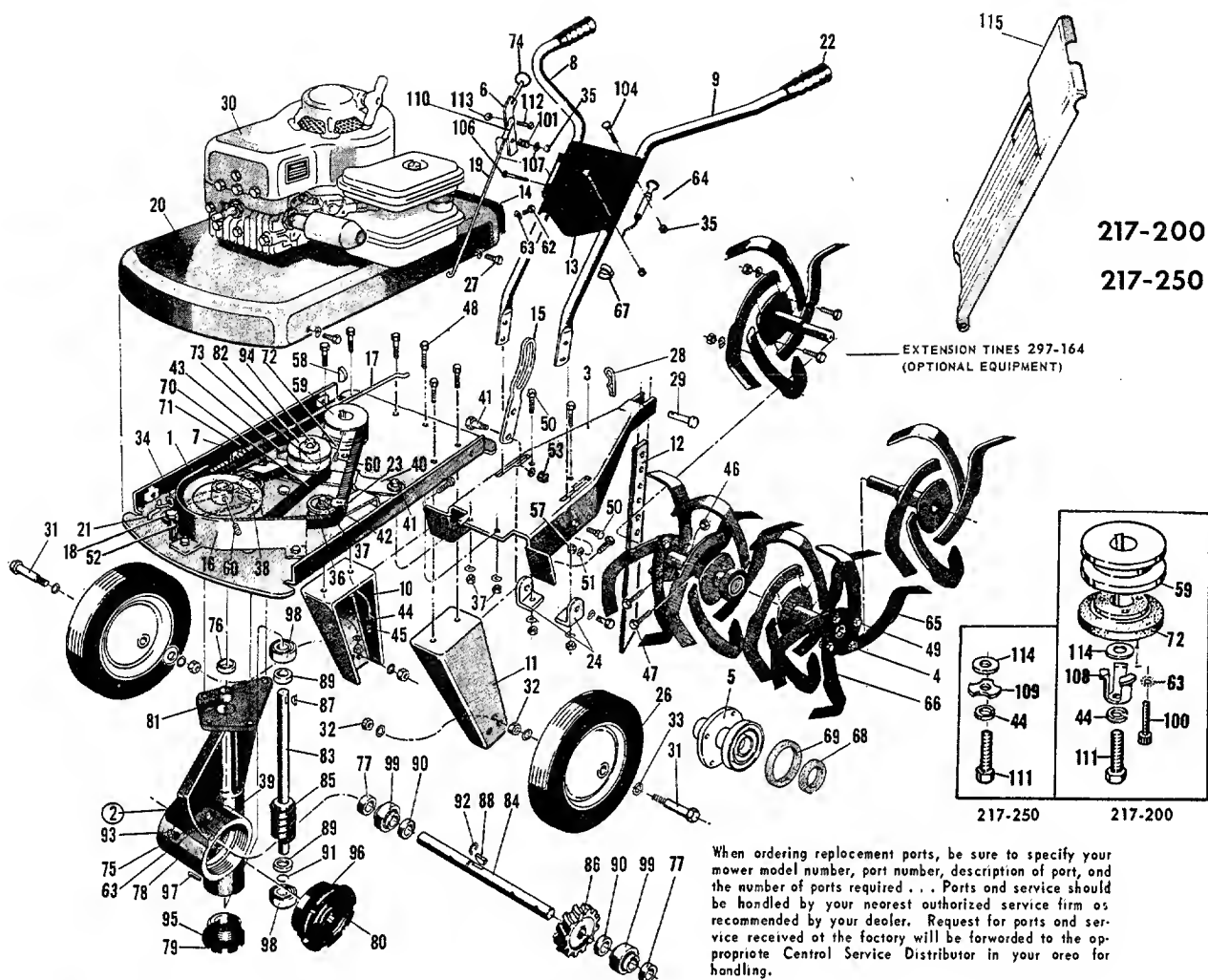
The above warranty will apply only to the original owner and will be effective only if the warranty card has been properly processed. It will not apply where the unit has been used commercially.

Warranty service is available through your local authorized service dealer or distributor. **UNDER NO CIRCUMSTANCES WILL THE RETURN OF A COMPLETE UNIT BE ACCEPTED BY THE FACTORY UNLESS PRIOR WRITTEN PERMISSION HAS BEEN EXTENDED.**

SAFETY RULES

Your rotary tiller is a precision built machine designed to take the work out of gardening and other related chores. It can be used for seed bed preparation, tilling, cultivating, furrowing, composting and mulching. Like any other piece of power equipment, it requires a certain amount of care and maintenance. In return for this, it will give a maximum of service and efficiency. Read these instructions carefully before assembling or operating your tiller. Through proper care and operation, you will obtain long, efficient service and trouble free operation.

1. Your tiller is a precision piece of power equipment. Exercise extreme caution at all times.
2. Do not attempt to start engine with the clutch control in engaged or "Forward" position.
3. Stand clear of tines when starting engine. Never stand in front of, or work on tines while the engine is running.
4. **NEVER** place hands or feet in the vicinity of the tines while the engine is running.
5. Always stop engine when tiller is not in actual use.
6. Always disconnect spark plug wire during repairs or refueling operations.
7. Do not fill gas tank while engine is running. Do not spill gasoline on hot engine.



PARTS LIST FOR MODELS NO. 217-200 AND 217-250

Part No.	Illus. No.	DESCRIPTION () - No. Req'd Per Ass'y	Part No.	Illus. No.	DESCRIPTION () - No. Req'd Per Ass'y
1	321-4107	Mounting Plate Assembly	60	710-765	Set Screw - Allen 5/16-24 x 1/4 lg. *
2	321-4100	Gear Case Assembly (Complete)	61	710-606	Hex Hd. Cap Scw. 1/4-20 x 1-1/2 lg. *
3	350-4329	Tailpiece Assembly			Plow Type Handle
4	321-4134	Outer Tine Adapter Assembly	62	710-240	Hex Hd. Self Tapping Screw 10-32 x 1/2 lg. Type F *
5	321-4138	Inner Tine Assembly	63	736-147	Lockwasher # 10 Screw *
6	310-4164	Control Handle Assembly (Complete)	64	746-120	Control - Throttle (Complete) - Plow Type Handle 217-200
7	310-4202	Idler Bracket		746-114	Control - Throttle (Complete) - Plow Type Handle 217-250
8	310-4246	Handle - R.H. - Standard		746-121	Control - Throttle (Complete) - Standard Handle
	310-4186	Handle - R.H. - Plow Type	65	742-107	Tine - L.H.
9	310-4247	Handle - L.H. - Standard	66	742-108	Tine - R.H.
	310-4143	Handle - L.H. - Plow Type	67	746-111	Cable Clip
10	350-4110	Leg - R.H.	68	736-124	Dust Pad
11	350-4109	Leg - L.H.	69	736-125	Dust Pad
12	321-4328	Depth Bar	70	754-106	"V" Belt 1/2 x 25 Gates *
13	312-4121	Handle Panel - Plow Type Handle	71	754-107	"V" Belt 1/2 x 30 Gates *
	312-4243	Handle Panel - Standard Handle	72	717-126	Reverse Drive Wheel
14	310-4126	Inspection Plate	73	748-111	Bronze Sleeve Bearing
15	310-4156	Control Pivot Lever	74	305-7891	Ball Knob †
16	312-4197	Belt Guard	75	310-4101	Locking Clamp ‡
17	310-4198	Control Rod - Lower	76	721-100	Oil Seal - Garlock #76 x 6113 ‡
18	310-4200	Reverse Idler Bracket Assembly	77	721-101	Oil Seal - Garlock #78 x 7510 ‡
19	711-166	Control Rod - Upper	78	719-100	Housing - Gear Case ‡
20	312-4258	Engine Bed	79	719-102	Bearing Adjustment Cap 3/4" ‡
21	310-7439	Anchor Spring Pin	80	719-101R	Bearing Adjustment Cap 1" ‡
22	305-1166	Grips	81	748-106	Bronze Sleeve Bearing ‡
23	310-7353	Belt Clip	82	756-112	Pulley - 2 Stage
24	310-4124	Handle Mounting Bracket	83	711-132	Worm Shaft 3/4" ‡
25	312-4160	Control Mounting Bracket - Plow Type Handle	84	711-133	Tine Shaft 1" ‡
26	501-4221	Wheel Assembly	85	717-104	Worm ‡
27	710-259	Hex Hd. Cap Scw. 5/16-18 x 5/8 lg. *	86	717-105	Worm Wheel ‡
28	714-106	Locking Pin	87	714-314	Key - Hi Pro No. 606 ‡
29	711-231	Clevis Pin	88	714-103	Key - Woodruff #91 * ‡
30	—	Engine	89	711-130	Spacer ‡
31	710-182	Hex Hd. Cap Scw. 1/2-13 x 3 lg. *	90	711-131	Spacer ‡
32	712-384	Hex Centerlock Nut 1/2-13 thread *	91	716-101	Snap Ring - Tru Arc #5100-75 ‡
33	736-108	Washer 33/64 I.D. *	92	716-102	Snap Ring - Tru Arc #5100-100 ‡
34	732-112	Spring - Tension	93	737-102	Pipe Plug - Special Breather Type ‡
35	712-107	Hex Centerlock Nut 1/2-20 thread *	94	711-138	Shoulder Screw
36	756-370	Idler Bearing Assembly	95	735-100	"O" Ring 2-1/8 x 2-3/8 x 1/8 ‡
37	712-372	Hex Centerlock Nut 5/16 - 18 thread *	96	735-101	"O" Ring 3-5/8 x 3-7/8 x 1/8 ‡
38	756-108	Pulley - 2 Stage	97	714-474	Cotter Pin 1/8 dia. x 3/4 lg. * ‡
39	710-125	Rd. Hd. Mach. Scw. 10-24 x 1/2 lg. * ‡	98	741-107	Roller Bearing - Timken 3/4" lg. ‡
40	310-4204	Belt Pusher	99	741-108	Roller Bearing - Timken 1" ‡
41	710-373	Shoulder Bolt	100	710-185	Allen Socket Hd. Cap Scw. 10-32 x 1 lg. Heat Treated
42	736-300	Washer 3/8 I.D.	101	732-958	Spring - Compression
43	310-4196	Hold-down Clamp	102	737-108	Alemite Drive Fitting - # 1992-B1 * ‡
44	736-169	Lockwasher 3/8 Screw *	103	737-103	Pipe Plug - Square Head 3/8 thd. * ‡
45	712-798	Hex Nut 3/8-16 thread *	104	710-256	Carriage Bolt 1/4-20 x 1-1/2 lg. *
46	712-116	Hex Elastic Stop Nut 3/8-24 thread	105	736-466	Flat Washer 17/32 I.D. *
47	710-113	Hex Hd. Cap Scw. 3/8-24 x 1-5/8 lg. - Heat Treated	106	710-136	Hex Hd. Cap Scw. 1/4-20 x 1-3/4 lg. *
48	710-253	Hex Hd. Cap Scw. 3/8-16 x 1 long *	107	736-463	Flat Washer 9/32 I.D. *
49	710-183	Hex Hd. Cap Scw. 3/8-16 x 1-1/8 lg. *	108	310-4259	Engine Shaft Spacer
50	710-451	Carriage Bolt 5/16-18 x 3/4 lg. *	109	310-4260	Washer Shaft Spacer
51	736-119	Lockwasher 5/16 screw *	110	310-8271	Adjustment Tube
52	732-250	Spring	111	710-152	Hex Hd. Cap Screw 3/8-24 x 1" lg.
53	712-430	Hex Elastic Stop Nut 3/8-16 thd.	112	710-136	Hex Hd. Cap Screw 1/4-20 x 1-3/4 lg.
54	712-123	Hex Nut 5/16-24 thd. * (N.S.)	113	712-324	Hex Stop Nut 1/4-20 thread
55	710-118	Hex Hd. Cap Scw. 5/16-18 x 3/4 lg. *	114	736-117	Flat Washer
56	710-158	Hex Hd. Cap Scw. 5/16-24 x 1-1/4 lg. *	115	312-4257	Handle Panel - Large - Standard Handle
57	712-267	Hex Nut 5/16-18 thread *			
58	714-105	Key - Sq. 3/16 x 3/16 x 1 lg. *			
59	756-105	Pulley			

* For faster service obtain standard nuts, bolts and washers locally. If these items cannot be obtained locally order by part number and size as shown on parts list.

† Part of Control Handle Assembly (Complete) 310-4164.

‡ Part of Gear Case Assembly (Complete) 321-4100.

ASSEMBLY

Your rotary tiller is shipped complete in a single carton. The tines, wheels, handles, controls and depth bar are to be assembled. This is done in the manner described below.

TINES - Mount tines on tine shaft as shown. Tines must be mounted with the cutting edges facing the front. The tiller will not operate properly unless the sharpened surface of the tines enter the soil first. Secure tines in position on tine shaft with cap screws (47), and nuts (46). **NOTE:** Dust pads (68 & 69) are provided in screw pack. These must be assembled as shown.

WHEELS - Insert axle bolts (31) into wheel hubs. Secure with locknuts (32) tightened only enough to allow free movement of the wheels (26). Attach wheel and axle assemblies to outside of tiller legs (10 & 11). Fasten with locknuts (32) as shown.

HANDLES - Insert handles (8 & 9) into slots in tool-piece assembly (3). **NOTE:** The handles are left (9) and right (8) and must be positioned accordingly. Secure lower part of handle with carriage bolts (50). Use square holes to rear. Do not tighten.

HANDLE PANEL AND CLUTCH CONTROL - Standard Handle

Assemble handle panel (13) (small) to handles as shown with handle panel (115) (large) covering both small panel and handles. Secure top portion with carriage bolts (104) and locknuts (35). Secure large panel at bottom with cap screws (48), lockwashers (44) and nuts (53). Assemble control handle assembly (6) to panel with cap screw (106), spring (101), washer (107) and locknut (35) as shown. Attach adjustment tube (110) to control rod (19). Insert formed end of control rod into control pivot lever (15) from left side. Fasten upper end of control handle assembly with cap screw (112) and locknut (113). Move throttle control knob out enough to allow face washer to be loosened. Position control (64) into slot in end of large panel. Tighten face washer. Fasten control cable to handle with cable clip (67).

HANDLE PANEL AND CLUTCH CONTROL - Plow Type Handle

Position handle panel (13) over upper handles. Hold in position with cap screws (61). Mount throttle control on under side of handle. Position on upper cap screw and fasten with locknut (35). Do not tighten. Fasten control cable to handle with cable clip (67). Attach hooked end of upper control rod (19) to control pivot lever (15) from left side. Put control handle assembly (6) in "Forward" position. Attach adjustment tube to control rod. Assemble to control handle with cap screw (112) and stop nut (113). Be sure "F-N-R" can be read from operator's position of tiller. Position control mounting bracket (25) on under side of right handle. Wide end should be to top. Fasten with cap screws as shown. Assemble remaining nuts. Tighten all nuts securely.

DEPTH BAR - Attach depth bar (12) in desired position with clevis pin (29) and lacking pin (28).

GRIPS - Assemble grips (22) to handle bars.

CHECK LIST BEFORE OPERATION

1. Check tiller tines for proper installation. With throttle control lever set on "Stop" position and the clutch control handle set in "Forward" position, slowly crank engine to determine direction of tine rotation. Be sure all tines are mounted so the sharpened edges enter the soil first.
2. Check all nuts and bolts for proper tightness. This is especially important during the initial operation period. Make this same check periodically thereafter.
3. Check throttle control for proper setting. If choke control on engine is not fully extended when the throttle control lever is on "Choke" position, reset as shown in ADJUSTMENT instructions.
4. Check gear case for proper lubricant level. With tiller on a level surface, lubricant level should be up to the rear pipe plug opening. This can be checked by removing rear pipe plug. Maintain correct lubricant level with Mobilube SAE 140 Gear Oil or equivalent. The gear case holds five (5) ounces of lubricant.
5. Check fuel tank. Clean, fresh, regular gasoline should be used at all times.
6. Check engine crankcase for proper oil level. The engine is shipped without oil in the crankcase. Be sure to fill crankcase before starting engine. Be sure crankcase is FULL.

NOTE: The engine is warranted separately by the engine manufacturer. For warranty service contact the engine manufacturer or their local authorized service station. All important information pertaining to care and operation is included in the engine manual.

STARTING YOUR TILLER

1. Be sure clutch control handle is in "Neutral" position.
2. Move throttle control lever to "Choke" position.
3. After cranking the engine several times, or as the engine fires, move the throttle control lever to run position.
4. Use "Choke" as needed to keep engine operating during warm-up period.
5. Adjust throttle control lever for desired operating speed.
6. To stop engine, move throttle control lever to "Stop" position. Keep throttle control lever in "Stop" position at all times when tiller is not in use.

NOTE: A brief break in period is essential to insure maximum engine life. This consists of running the engine at half speed for a period of time required to use one tank of gasoline. This is necessary on the initial run only. It is also recommended that the oil be changed after five (5) hours of operation. This allows for the removal of impurities which may have accumulated during the break in period. Subsequent oil changes should be made as stated in the engine manual. Always check oil before using your tiller. Be sure crankcase is full.

OPERATING INSTRUCTIONS

For your own convenience and safety, observe all safety suggestions shown on the front cover. Your tiller is not a toy, it is a precision piece of power equipment. Treat it as such.

It is important to recognize the fact that the forward and penetrating action of the rotary tiller is obtained from the rotating action of the tines in the soil. The depth bar acts as a brake for the tiller and controls the depth and speed at which the machine will operate. By lowering the setting of the depth bar, the forward speed of the machine is reduced and the working depth of the tines is increased. Raising the setting of the depth bar increases the forward speed and reduces the working depth. When soil conditions are severe and several passes must be made over a certain area, the depth bar setting should be lowered each time a pass is made. Further control of tilling depth and travel speed can be obtained by variation of pressure on the handles. A downward pressure on the handles will increase the working depth and reduce the forward speed. An upward pressure on the handles will reduce the working depth and increase the forward speed. The type of soil and working conditions will determine the actual setting of the depth bar and the handle pressure required.

1. Tine engagement and forward travel is achieved by moving the clutch control handle to "Forward" position. Tine rotation and forward motion are stopped by moving the clutch control handle to "Neutral" position. Reverse tine action and reverse travel motion can be maintained by **HOLDING** the clutch control handle in "Reverse" position. Releasing the handle stops reverse operation automatically.
2. The throttle control lever adjusts the engine speed. It also gives finger tip control of the carburetor choke and magneto stop switch. With the throttle control knob pushed completely forward, the carburetor is in "Choke" position. Pulling the knob out slightly releases the carburetor from "Choke" and adjusts the engine speed to "Fast". Pulling the knob further out reduces the engine speed to "Slow".
When the knob is pulled completely out, the magneto stop switch grounds out the spark and stops the engine.
3. With the depth bar raised out of operation, self propelled transporting of the tiller is easily achieved. With no pressure on the handles and the throttle control set for "Slow" engine speed, move the clutch control handle to the forward position and let the tiller gently propel itself.

ADJUSTMENTS

BELTS - Belt slack is taken up by a spring loaded idler pulley. Because of this, belt adjustment is not required.

CLUTCH - No adjustment in clutch linkage is required. This is done automatically by the spring loaded idler.

NOTE: Belt and clutch adjustments can be made with the adjustable control rod.

"O" RING If oil leakage at the bearing cap should occur, take up on the "o" ring of the gear case may be needed. This is accomplished by removing the locking clamp and turning the bearing adjustment cap clockwise enough to correct. Move adjustment cap back one notch and replace locking clamp.

THROTTLE - If adjustment becomes necessary, the throttle control wire assembly can be reset as follows:

1. Loosen, but do not remove, screw securing throttle control wire assembly at engine.
2. Move throttle control knob to "Choke" position.
3. Move lever, to which control wire is fastened at engine, to full choke position and retighten screw to secure throttle control wire assembly.

HANDLES - The position of the handles may be adjusted by removing and moving carriage bolts in the lower mounting holes. Adjustment should be made for the most convenient operating height.

WHEELS - Wheel positions may be varied to give further adjustment of handle height. Various wheel positions also give variations of the leverage and weight distribution over the tines. Wheels should be set to suit the local soil conditions and the operator's convenience.

TINES - The standard width of cut is 26". Because of the various types of work the tiller may be put to, variation in the tilling widths may be necessary. This can be accomplished in a number of ways.

1. Standard tine arrangement. 26"
2. Remove outer tine assemblies (complete). 12"
3. Remove outer tines from outer tine assemblies. Tines may be interchanged with opposite sides. 20"
4. Add tine extensions to standard arrangement. 40"

NOTE: When adjusting tines, be sure the cutting edges enter the soil first.

MAINTENANCE AND LUBRICATION

ENGINE - Service engine in accordance with the engine manufacturer's owner's guide. **NOTE:** To drain oil, remove oil filler plug and tip tiller on its side. Drain oil while the engine is warm. See engine manual for filling instructions.

GEAR CASE - Proper lubricant level should be up to the rear pipe plug. Check with tiller on a level surface. Add lubricant through the vented pipe plug hole. Add enough to bring level up to rear pipe plug hole. Use Mobilube SAE 140 Gear Oil or equivalent. Gear case should be maintained with five (5) ounces of lubricant.

Lubricate the upper bushing in the gear case with a small amount of grease. Do not over lubricate as any excess will enter the gear case proper. Use a high pressure gun grease.

THROTTLE - Periodically lubricate throttle control lever and throttle control wire assembly with a few drops of light oil (SAE 10 or 20) for ease of operation.

BELTS - Access to "V" belt and pulley assemblies is accomplished by removing the engine and engine bed as described below.

1. Place clutch control handle into "Neutral" position.
2. Remove four cap screws which secure engine bed to mounting plate assembly. Remove engine and engine bed. Do not kink control wire.
3. Remove front belt guard.
4. Remove upper belt from pulley assembly.
5. Place clutch control handle into "Forward" position.

6. Remove bottom belt.
7. Replace bottom belt. This must be properly mounted in the lower pulley grooves and between the belt clip and the idler pulley on the spring tensioned idler pulley assembly.
8. Place clutch control handle into "Neutral" position.
9. Replace upper belt.
10. Remove inspection plate from engine bed.
11. Replace engine bed and engine on mounting plate assembly. Do not kink control wire. Move engine bed and engine as far forward as possible.
12. Reach through inspection hole and guide belt into position on engine pulley.
13. Check visually through inspection hole to make sure belt is inside all belt guards and that belt is properly seated on engine pulley. A flashlight will help you make this check quickly and easily.
14. Line up mounting holes and replace cap screws and lockwashers. Do not tighten cap screws until all are in place. Replace inspection plate.

GENERAL - Check periodically all nuts and bolts. Loose nuts and bolts can cause permanent damage to your unit. Keep all nuts and bolts securely tightened.

STORAGE - The following steps should be taken to prepare your tiller for storage.

1. Clean tiller thoroughly and lubricate as described in the preceding instructions.
2. Coat tilling tines with grease to prevent rusting.
3. Prepare engine for storage in accordance with engine manufacturer's owner's guide.
4. Block tiller legs to raise tires clear of floor. Be sure tiller is level.
5. Store in a dry clean area.

ATTACHMENTS

EXTENSION TINES - This attachment is available to increase your tilling width up to 40". Extension tines are easily installed and removed. Order under part number 297-12164.

FURROW OPENER - This attachment is easily installed on the depth bar of your tiller. It can be used for either furrowing or hilling operations. These attachments are available through your local dealer.

For wide (2' x .43") depth bar, order furrow opener 297-179.

For narrow (1-1/2' x 3/8") depth bar, order furrow opener 297-178.

SERVICE NOTES

DRIVE BELT SLIPS

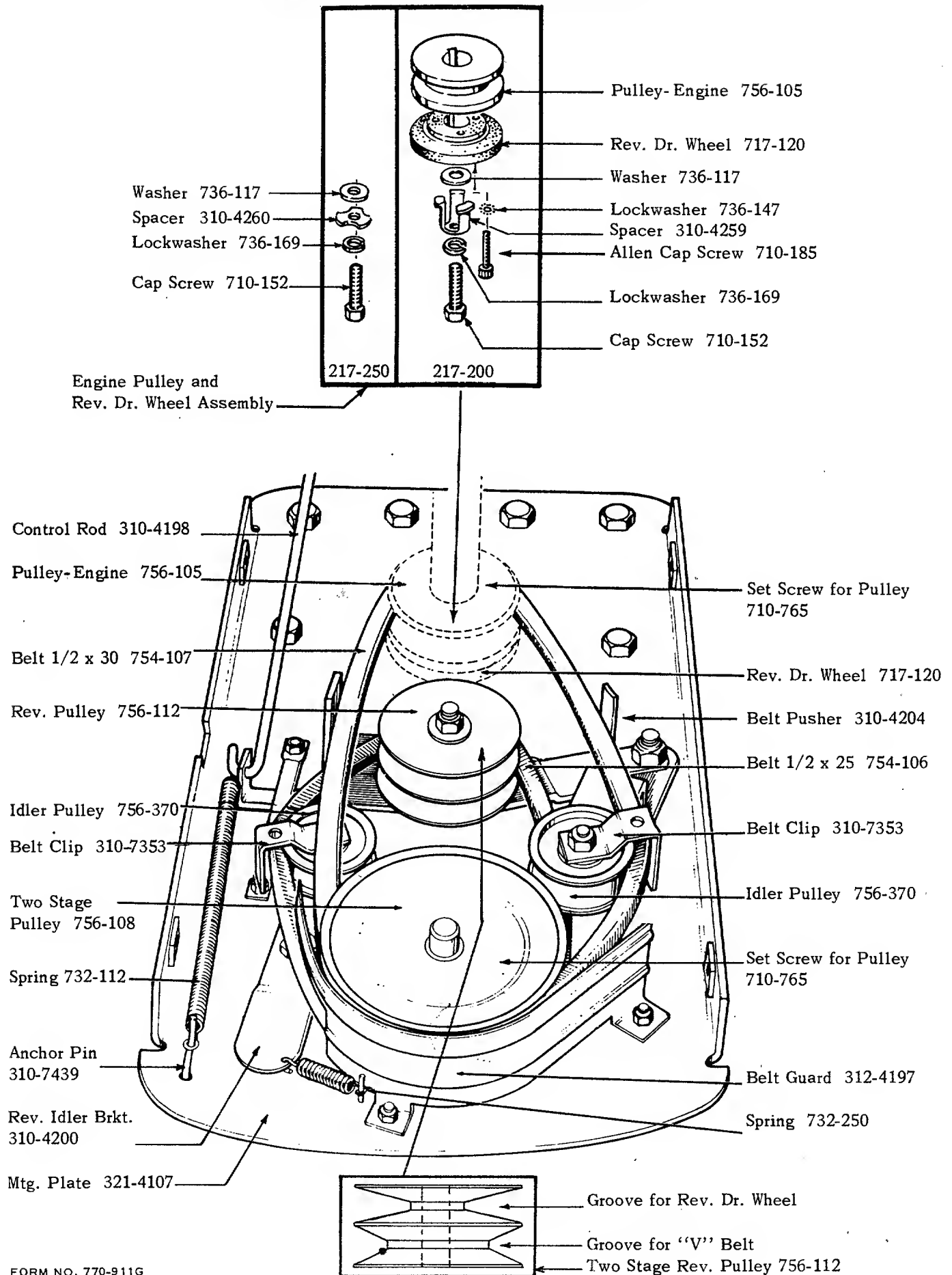
1. Lubricate contact surface under idler pulley bracket.
2. Check idler pulley bracket mounting bolts for excessive tightness. Idler pulley brackets must be mounted securely but still must move freely.
3. Check control rod for improper assembly. If adjustment tube is attached to lower end of control rod instead of upper end, it may bind on control pivot lever and prevent full use of tension spring.
4. Check belt guards. Belt guards must clear all points of the tightened belt.
5. Check belt clips. These must not touch belt when belt is tightened.
6. Check control rod adjustment. Adjusting the adjustment tube on the control rod lengthens or shortens control linkage.
7. Belt must be mounted on engine pulley. When assembling, it is often mounted between pulley and reverse drive wheel. It must also be mounted inside the stationary belt guards.

REVERSE DRIVE

1. Reverse drive wheel should line up with its matching pulley. Check mounting bolt in engine pulley for proper tightness.
2. Matching pulley for reverse drive wheel must be assembled as shown on diagram. The deeper groove matches the reverse drive wheel. The shallow groove matches the "V" belt.
3. Belt guards and belt clips must not touch the tightened belt.
4. Reverse idler bracket must move freely. Check mounting bolts for excessive tightness. Lubricate contact surface under idler bracket.
5. Reverse should operate only when control handle assembly is held in reverse position. Adjust control rod for proper operating position.

NOTE: If belts are excessively stretched, replacement will be necessary.

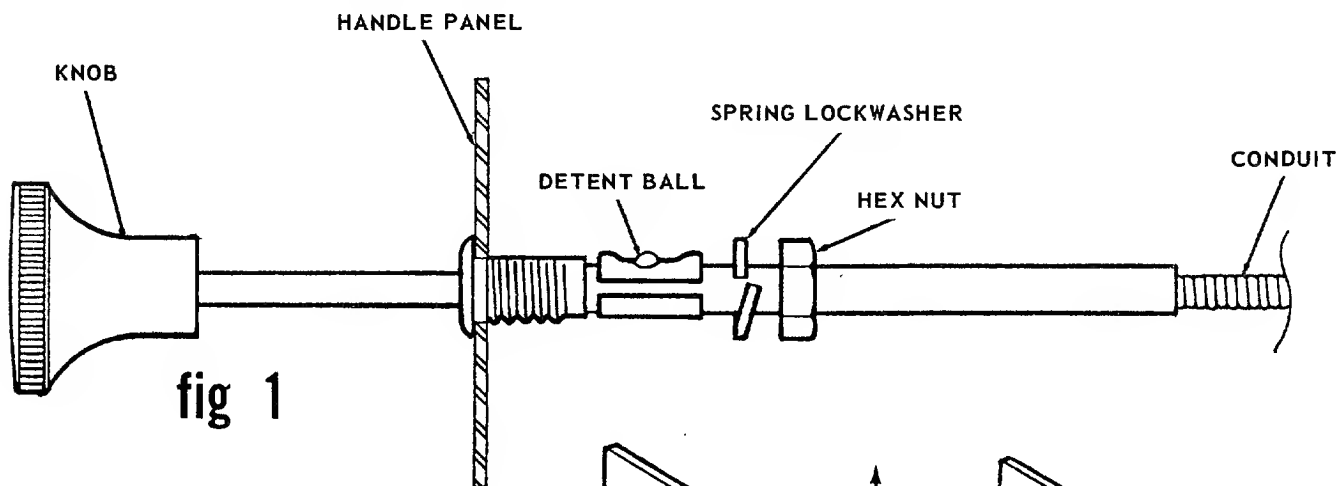
TILLER DRIVE MECHANISM



THROTTLE ASSEMBLY

FOR PANEL MOUNT CONTROL

To assemble the Throttle Assembly, push the black plastic knob in all the way, then pull it out until the detent ball clicks into the second notch. If the Throttle Assembly does not do this see adjustments below. The knob will be pulled out approximately 1-3/8" when in the second notch. In this position the spring lockwasher and the hex nut will slide past the detent ball. Place the conduit through the slot in the handle panel (see fig. 2) and push the unit (see fig. 3) in until it seats as shown (see fig. 1). Secure with the spring lockwasher and hex nut.



ADJUSTMENTS - (see fig. 4)

To Check:

Remove Air Cleaner. Move Throttle Assembly to CHOKE position. The carburetor choke should then be closed. Move the Throttle to STOP. Control lever on carburetor should then make good contact with stop switch to short out ignition.

To Adjust:

Place Throttle on equipment in FAST (high speed) position. Lever "C" on carburetor should be just touching choke arm at "D". To adjust, loosen casing clamp screw "A" on blower housing. Move control casing "B" forward or backward until correct position is obtained. Tighten screw "A". Recheck above operation and replace Air Cleaner.

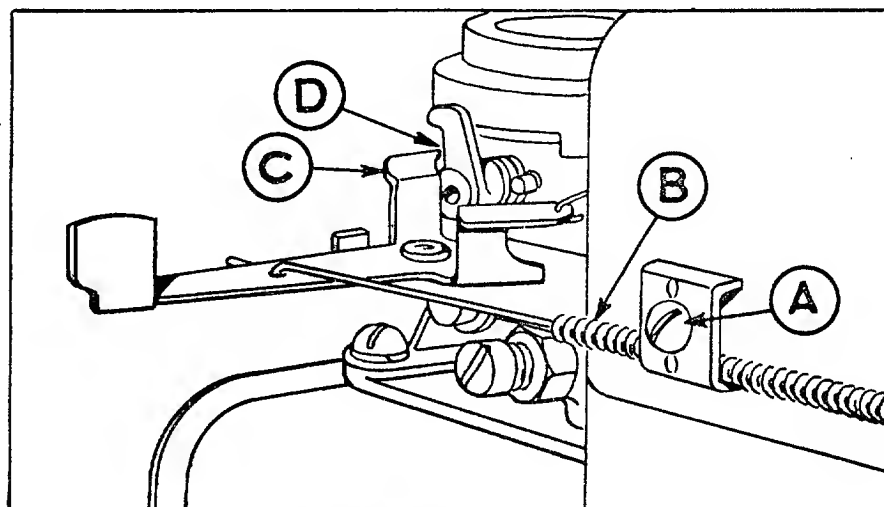


fig 4